

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1 – 39. (Canceled)

40. (New) An apparatus adapted to detect an object in a work area, the object having a tag element affixed thereto, the apparatus comprising:

a first electronic circuit coupled to a transmit/receive antenna and adapted to emit a varying wideband interrogation signal to energize said tag element to enable said tag element to generate at least one un-modulated return signal in response to energization by said varying wideband interrogation signal; and

a second electronic circuit coupled to said transmit/receive antenna and adapted to determine whether said tag element is present in said work area from said at least one un-modulated return signal generated in response to said energization by said wideband interrogation signal.

41. (New) The apparatus of claim 40 wherein said varying wideband interrogation signal includes a pulse-width varying wideband interrogation signal.

42. (New) The apparatus of claim 40 wherein said varying wideband interrogation signal includes a voltage varying wideband interrogation signal.

43. (New) The apparatus of claim 40 wherein said transmit/receive antenna includes three mutually orthogonal rings, each adapted to individually transmit said varying wideband interrogation signal in round-robin succession in respective coordinate directions and each adapted to receive said at least one return signal, wherein transmit and receive cycles of

each ring are clocked so as to avoid overlap with transmit and receive cycles of others of said rings.

44. (New) An apparatus adapted to detect an object in a work area, the object having a tag element affixed thereto, the apparatus comprising:

a first electronic circuit coupled to a transmit/receive antenna and adapted to emit a varying wideband interrogation signal, the varying wideband interrogation signal having a plurality of pulses adapted to additively build energy in said tag element to enable said tag element to generate at least one return signal that is an image of a resonance decay of said additively built energy of said tag element; and

a second electronic circuit coupled to said transmit/receive antenna and adapted to determine whether said tag element is present in said work area and to discriminate said at least one return signal from noise, based on a magnitude of said resonance decay that commences after turn-off of at least one of said pulses.

45. (New) The apparatus of claim 44 wherein said at least one return signal is un-modulated.

46. (New) The apparatus of claim 44 wherein said at least one return signal includes a relatively narrowband return signal centered about a specific, but not predetermined frequency.

47. (New) The apparatus of claim 44 wherein said varying wideband interrogation signal includes a pulse-width varying wideband interrogation signal.

48. (New) The apparatus of claim 44 wherein said varying wideband interrogation signal includes a voltage varying wideband interrogation signal.

49. (New) The apparatus of claim 44 wherein said transmit/receive antenna includes three mutually orthogonal rings, each adapted to individually transmit said varying wideband interrogation signal in round-robin succession in respective coordinate directions and each adapted to receive said at least one return signal, wherein transmit and receive cycles of each ring are clocked so as to avoid overlap with transmit and receive cycles of others of said rings.

50. (New) The apparatus of claim 44 wherein said second electronic circuit includes a digital signal processor (DSP) adapted to filter said at least one return signal from noise.

51. (New) The apparatus of claim 44 wherein said first and second electronic circuits and said transmit/receive antenna are part of a hand-held scanning device adapted to detect said object having said tag element affixed thereto in said work area, including a surgical area internal to a patient.

52. (New) An apparatus adapted to detect an object in a work area, the object having a tag element affixed thereto, the apparatus comprising:

a first electronic circuit coupled to a transmit/receive antenna and adapted to emit a varying wideband interrogation signal, the varying wideband interrogation signal having at least one pulse adapted to provide energy to said tag element to enable said tag element to generate at least one return signal that is an image of a resonance decay of said provided energy of said tag element; and

a second electronic circuit coupled to said transmit/receive antenna and adapted to determine whether said tag element is present in said work area by use of a detected magnitude, that is above a noise level and that commences after turn-off of said at least one pulse, of said resonance decay.

53. (New) The apparatus of claim 52 wherein said at least one pulse includes a plurality of pulses adapted to additively build said energy in said tag element.

54. (New) The apparatus of claim 52 wherein said at least one return signal includes a relatively narrowband return signal centered about a specific, but not predetermined frequency.

55. (New) The apparatus of claim 52 said varying wideband interrogation signal includes a pulse-width varying wideband interrogation signal.

56. (New) The apparatus of claim 52 said varying wideband interrogation signal includes a voltage varying wideband interrogation signal.

57. (New) The apparatus of claim 52 wherein said transmit/receive antenna includes three mutually orthogonal rings, each adapted to individually transmit said varying wideband interrogation signal in successive round-robin in respective coordinate directions and each adapted to receive said at least one return signal, wherein transmit and receive cycles of each ring are clocked so as to avoid overlap with transmit and receive cycles of others of said rings.

58. (New) The apparatus of claim 52 wherein said second electronic circuit includes a digital signal processor (DSP) adapted to filter said at least one return signal from noise.

59. (New) The apparatus of claim 52 wherein said second electronic circuit includes a Bessel filter adapted to narrow a bandwidth of said noise.

60. (New) The apparatus of claim 52 wherein said first and second electronic circuits and said transmit/receive antenna are part of a hand-held scanning device adapted to

detect said object having said tag element affixed thereto in said work area, including a surgical area internal to a patient.

61. (New) The apparatus of claim 52 wherein said at least one return signal is un-modulated.